CLAIMS

1. A method of estimating a Signal Interference Ratio (SIR) of a pilot channel in a MC-CDMA system, comprising the steps of:

receiving a spread spectrum signal including a pilot channel signal and a plurality of data channel signals;

despreading the pilot channel signal using a plurality of Spread Factors (SF);

determining the SIR for each of the plurality of SF; comparing each of the determined SIRs with a predetermined threshold value; and

selecting as the estimated SIR, the SIR of the first SF that is below the predetermined threshold value.

2. The method of estimating a SIR of a pilot channel of claim 1, further comprising the step of:

storing each of the determined SIRs for the plurality of SF in a memory.

3. The method of estimating a SIR of a pilot channel of claim 1, wherein the despreading step comprises:

despreading the pilot channel with an $SF=2^n$, where n=1 to m, where m is an integer.

4. The method of estimating a SIR of a pilot channel of claim 1, further comprising the step of:

performing adaptive modulation and coding and equalization using the selected estimated SIR.

5. The method of estimating a SIR of a pilot channel of claim 1, wherein the predetermined threshold is between about 5db and about 10db.

6. A method of estimating a Signal Interference Ratio (SIR) of a pilot channel in a MC-CDMA system, comprising the steps of:

receiving a spread spectrum signal including a pilot channel signal and a plurality of data channel signals;

despreading the pilot channel signal using a plurality of Spread Factors (SF);

determining the SIR for each of the plurality of SF; storing each of the determined SIRs for the plurality of SF in a memory;

comparing each of the determined SIRs with a predetermined threshold value; and

selecting as the estimated SIR, the SIR of the first SF that is below the predetermined threshold value.

- 7. The method of estimating a SIR of a pilot channel of claim 6, wherein the despreading step comprises despreading the pilot channel with an $SF=2^n$, where n equals 1 to m, and m is an integer.
- 8. In an MC-CDMA system, a receiver circuit for estimating a Signal Interference Ratio (SIR) of a received spread spectrum signal including a pilot channel and a plurality of data channels, the receiver circuit comprising:

a pilot channel despreader that receives the spread spectrum signal and despreads the pilot channel using a predetermined spread factor (SF) to generate a corresponding despread pilot channel signal;

an average pilot symbol module, connected to the pilot channel despreader, that receives the despread pilot channel signal and filters noise therefrom, to generate a filtered despread signal;

a first average power module connected to the average pilot symbol module for receiving the filtered despread pilot channel signal and generating a first signal power signal;

a first mixer, connected to the pilot channel despreader and the average pilot symbol module, that combines the filtered despread signal and the despread pilot channel signal to form a first combined signal;

a second average power module connected to the first mixer for receiving the first combined signal and generating an interference power signal;

a second mixer, connected to the first and second average power modules, for generating second signal power signal;

a signal interference module, connected to the second mixer and the second average power module, for generating a signal interference ratio (SIR) for the pilot channel signal with the first SF;

a memory connected to the signal interference module for storing the generated SIR;

an incrementor, connected to the pilot channel despreader, for incrementing the value of the SF so that a next SIR is generated corresponding to the incremented SF;

a comparator for comparing each of the generated SIRs with a predetermined threshold value, wherein the estimated SIR is determined as the first SIR that is below the predetermined threshold value.

- 9. The receiver circuit of claim 8, wherein the incrementor increments the SF by multiplying the prior SF by two.
- 10. The receiver circuit of claim 8, further comprising a first gain element connected after the second average power module and before the second mixer and the signal interference

module.

11. The receiver circuit of claim 10, further comprising a second gain element connected between the first gain element and the second mixer.